285* Influence of inhaled hypertonic saline combined with airway clearance on SpO2, heart rate, dyspnoea and wet sputum weight in hospitalised CF patients

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Background: Short- and longer term studies have shown that inhalation of hypertonic saline (HS) is well tolerated, improves lung function, quality of life and reduces exacerbations in CF patients. We are interested in the effect of inhaling hypertonic saline (NaCl 6%) **during** airway clearance (AC), using two different inhalation devices.
Methods: In this randomised cross-over study 15 CF patients were included. Patients performed AC combined with inhalation of HS, using the Pari Turbo Boy N compressor with LC Sprint nebuliser (PLC) on day 1, the E-Flow Rapid (EF) on day 2 and no inhalation therapy on day 3. All patients had treatment sessions of 30 minutes by an experienced physiotherapist.
Results: No significant difference in SpO2, heart rate and Borg score before and after each treatment in the 3 consecutive days was found, but patients evacuated significantly more sputum ($P < 0.005$), combining inhalation of HS with AC on day 1 and 2 for both nebulisers. Mean nebulisation time was significantly longer for the compressor compared to the E-Flow Rapid.
Conclusion: Inhaling HS during AC evacuates more sputum and causes no side effects. A well-considered choice of the inhalation device can reduce the inhalation time significantly.

286* Use and perceived benefits of nebulised hypertonic saline (HS) treatment in adult patients with cystic fibrosis

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Background: Benefits of nebulised HS are well recognised (1). We have introduced this treatment into our routine care but were initially concerned about bronchoconstriction and commenced some patients on 3.9% HS.
Aim: To investigate usage of HS and patient's perception of benefits.
Methods: Notes of patients who received a test dose of HS were examined for gender, age, FEV1% predicted, HS tonicity, delivery device, bronchodilator use and subsequent prescription. Patients were invited to answer a short questionnaire relating to perceived benefits, HS and rhDNase usage.
Results: 73 patients (37 male) received a total of 86 test doses, mean(SD) age 29(8.9) years, FEV1%pred 46.6(2.3)%. 44/73 (60%) received prescription for 7% (13/44 started on 3.9% and progressed to 7%), 24/73 (33%) were prescribed 3.9% and HS was not prescribed for 5 (7%) patients. A variety of nebuliser systems were used. A bronchodilator was used pre HS for 53/73, mixed with HS 18/73 and not used in 2/73. 47/73 (64%) patients completed a questionnaire. 15/47 used HS od, 1/47 bd, 5/47 on alternate days, 10/47 only when unwell and 16/47 only in hospital. 25/47 (53%) also inhaled rhDNase. 33/47 (70%) found it easy to fit into their treatment regimen. 39/47 (69%) found their sputum easier to move after nebulised HS and 31/47 (66%) felt their airway clearance treatment was easier. There was no significant difference in perceived sputum clearance between those using 7%HS ($n = 31$) and 3.9%HS ($n = 16$).
Conclusion: HS (both 7% and 3.9%) is well tolerated by adult patients with mild to severe CF lung disease. Patients report HS is a useful adjunct to their airway clearance treatment that is easy to fit into their treatment regimen.

Reference(s)

[1] Elkins et al. NEJM 2006;354:3.

287 Audit of a physiotherapy led nebuliser concordance programme for cystic fibrosis adults

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Background: Concordance with nebulised drug therapy (NDT) was recognised as suboptimal.
Aim: To optimise NDT and assess the benefit of a physiotherapy led nebuliser concordance programme (NCP) via audit.
Method: CF adults who commenced new NDT from June 2006 were assessed/educated at initial dose/1/6/12mths re: potential benefits/side effects/contraindications; timing/order in relation to other drugs/ACT and nebuliser care. Drugs commenced included Pulmozyme, Colomycin, TOBI and Hypertonic saline. The physiotherapist completed a NCP document; data collected included demographics, lung function, and assessment of knowledge, concordance and nebuliser technology.
Results: CF adults (16–62 yrs, M 61%: F 39%) entered the NCP, 42 discontinued new NDT and 70 await final review. Data is presented for 120 CF adults who completed NCP to date. Lung disease severity was mild in 53%, moderate 36% and severe 11%. Post-NCP lung function improved in 58% and remained the same in 4%. Knowledge of NDT benefits improved in 65% and remained the same in 30%. Knowledge of side effects/contraindications improved in 49% and in 48% remained the same. Post-NCP 98% were aware of dosage/storage of NDT and 97% reported full concordance. Timing/order of drugs was correct in 86% and 90% respectively. Post-NCP nebuliser hygiene/maintenance were optimal in 86%.
Conclusion: The NCP in conjunction with the provision of new, more efficient, faster nebuliser technology appears to have enhanced knowledge and reported concordance with NDT and improved outcome in CF adults.
Recommendations: Currently being undertaken are 12 month follow-up, dissemination of results and development of a patient information leaflet, available via the internet, to support the NCP programme.

288* Attitudes to recreational androgenic anabolic steroids among adult CF patients

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Introduction: The use of androgenic anabolic steroids (AAS) is becoming more popular in recreational gyms, and CF patients using such facilities may be exposed to these unapproved substances. To look at this further, we surveyed patients at our adult CF unit who were regular gym users about their attitudes to AAS.
Method: Although we identified a number of CF patients who might be using AAS, only 4 (mean age 21 years, range 18–25, all male) were willing to be interviewed. Using a structured questionnaire, we asked what steroids they used, their reasons for doing so, their expectations and experiences, and any complications.
Results: In all cases, patients were introduced to AAS by other gym users and took nandralone, sustanon, and methandrostenolone in varying doses for between 6 and 12 weeks. Patients expected to put on weight, gain muscle, and be capable of more exercise; 2 indicated that improving body image was also a factor. The desire to be seen as 'normal' by peers was a common theme. In practice, all gained some muscle mass, and 3 had improved pulmonary function: in 1, hospital admission was unnecessary for 7 months. Whilst all indicated they had more self confidence whilst taking AAS as a result of improved body mass, 3 noticed increased aggression and 1 acne. Only 1 was worried about possible heart side effects: all indicated they may use AAS again. No patient considered informing the CF team first due to possible disapproval.
Conclusions: Young male CF adults can be sensitive about body image, and those exercising in gyms may be encouraged to use illegal anabolic steroids. CF care teams need to be aware of this, in order to work with these individuals to minimise the physiological and psychological complications that may occur in these vulnerable young adults.